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| 09 825,446 | 04 04 2001 | Keisbi Nakamura | 010481 | 1801 |

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EXAMINER

EASTHOM, KARL D

ART UNIT PAPER NUMBER

2832

DATE MAILED: 02 20 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09 825,446

Applicant(s)

Nakamura et al.

Examiner

Karl Easthom

Art. Unit

2832



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

If the period for reply specified above is less than thirty (30) days, a reply within the statutory time period of thirty (30) days will be considered timely.

If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.

Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. 35 U.S.C. 133.

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Jan 9, 2002

2a) ☒ This action is FINAL.

2b) ☐ This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1 and 21-53 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) 33-44 is/are allowed.

6) ☒ Claim(s) 1, 21-32, and 45-53 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1. Figure 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 21, 24, 26, 28-30, 45-46, 49, 51, and 53 are rejected under 35 U.S.C. 103(a) as obvious over Smejkal et al. in view of Shindo et al. Smejkal discloses the claimed invention, except the solder thickness, at Fig. 3 (prior to being cut as seen in Fig. 6A) or Fig. 7(after cutting) with resistive alloy 28, and copper electrode strips 30,32, and the diffusion layer is created by the cladding process disclosed at col. 3, lines 3-12, where the joining by the high pressure necessarily results in diffusion else the materials would not be joined. In Fig. 7 there are a series of straight and uniform current paths in each cut section, interpreting the phrase in light of applicant's specification, where applicant has a series of straight paths in Fig. 1 but the overall path is not straight. (Or, prior to trimming, as in Fig. 4, there is a straight and uniform current path. Or alternatively, trimming is performed only if the desired resistance is not high enough, such that a noncut resistor is disclosed because any desired resistance is contemplated, see col. 3, lines 43-55, where "each body is adjusted to its desired resistance value". That is, if the resistance

Shindo et al. discloses a fused solder layer 7 in the claimed thickness at col. 3, lines 31-46 for the purpose of making a uniform solder layer of increased reliability due to a smoother surface that holds less contaminants, such that it would have been obvious to render such a thickness where solder is disclosed by Smejkal. The solder is "fused" where it is melted. In claims 21 and 46, the tin solder at col. 4, lines 55-60 meets the claim. In claims 24 and 49, the thicknesses of the resistor and electrode 28, 30 appear about equal where the device is described as having double thickness at the electrodes, see claim 8 of Smejkal et al. In claims 26 and 51, the electrodes are copper at col. 3, line 6. In claims 29-30, the insulation is 62 on both sides. In claim 28, an appropriate thickness is selected at col. 3, lines 1-10, meeting the claim. In claim 45, the opposite side of 30 can be a "wire site" where no wire is claimed and a wire could be bonded thereat.

4. Claims 1, 23, 45 and 48 are rejected under 35 U.S.C. 103(a) as obvious over Smejkal et al. in view of Takeuchi et al. Smejkal discloses the claimed invention, except the solder and electrode thickness. That thickness is disclosed as standard in the art for a surface mounted chip resistor at col. 9, lines 30-33 for mounting thereof such that it would have been obvious to form the claimed thickness for the layers of Smejkal et al. whereat a surface mounted chip resistor is also disclosed for mounting.

5. Claims 25, 27, 31-32, 50, 52 are rejected under 35 U.S.C. 103(a) as obvious over Smejkal et al. in view of Shindo et al., further in view of Rainer et al. The claimed invention is as noted above except the resistor and insulation layer materials. Such epoxy and nickel chromium materials are disclosed at col. 3, lines 1-10, and col. 4, lines 58-62 for the purpose of employing

readily available materials, and it would have been obvious in view of Rainer to employ same where Smejkal discloses at col. 1 that the device of Rainer is improved upon in other aspects. In claims 27 and 52, the resistivity of copper electrodes is within the claimed range of the resistivity of nichrome, and it would have been obvious to form the claimed relationship where electrodes are less in resistance than resistors, by definition.

6. Claims 22-23, 47-48 are rejected under 35 U.S.C. 103(a) as obvious over Smejkal et al. in view of Shindo et al., further in view of Person et al. The claimed invention is disclosed except for the resistor thickness. Person discloses same at col. 2, lines 29-41 for the purpose of forming a high powered plate resistor such as that of Smejkal, such that it would have been obvious to form such a resistor where Smejkal discloses varying the thickness as appropriate as noted above. For the electrode thickness, Smejkal discloses making the thicknesses about equal between the resistor and electrodes, at claim 8, for the purpose of forming a compact structure that can be surface mounted, so that it would have been obvious to employ an electrode in the same claimed thickness as the resistor.

7. Claims 1, 21, and 24-32 are rejected under 35 U.S.C. 103(a) as obvious over Smejkal et al. in view of Shindo et al., further in view of Szwarc et al. The claimed invention is as noted above except that here, the straight and uniform current path is treated here as meaning that the path is straight and uniform everywhere between the electrodes. Rainer discloses such a path to minimize hot spots at col. 1, lines 30-35 such that it would have been obvious to employ the straight body for that purpose, where Rainer is cited and incorporated by reference as improved upon at col. 1 for that reason, and Smejkal also improves upon Rainer for a different reason.

See the above rejections for the other claim limitations. (where Rainer is incorporated as noted, to address claims 25, 27 and 31-32)

8. Claims 33-44 are allowed.

9. Applicant's arguments with respect to claims 1, 21-32 and 45-53 have been considered but are moot in view of the new ground(s) of rejection. As to the term "fused", it is interpreted as melted to the body.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

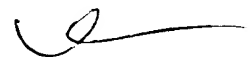
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703)308-3306. The examiner can normally be reached on M-Th. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad, can be reached on (703)308-7619. The fax

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phone number for the organization where this application or proceeding is assigned is (703)308-7722. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



KARL D. EASTHOM
PRIMARY EXAMINER